

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

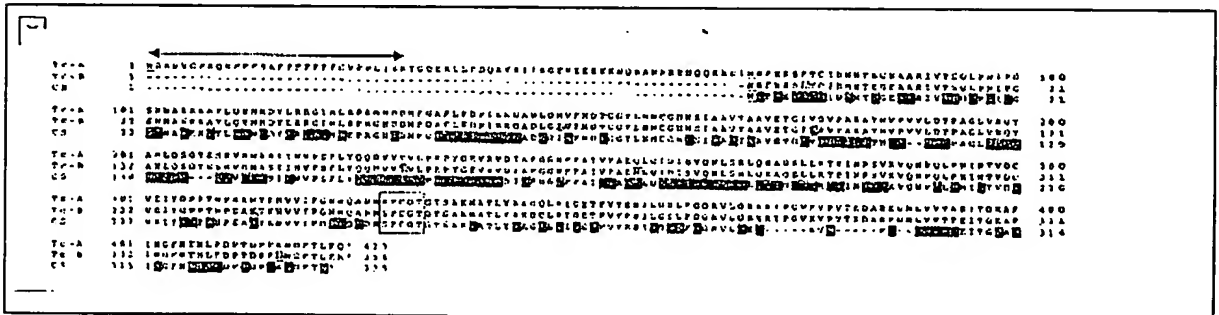
**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

Figure 1

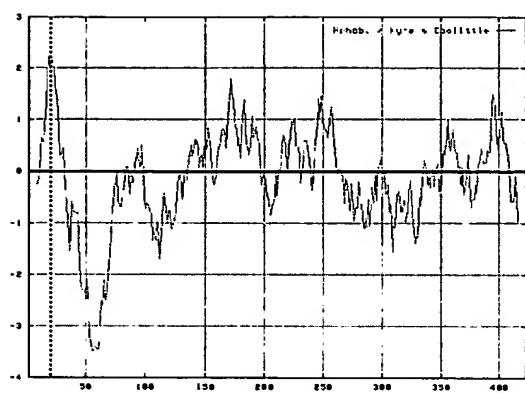
A

TC-A 1 -----CTTTTCTTTT-----
 AAAACAAAAAATTCGGGGGGAATATGGAACAGC- 50
 TC-B 1 GGTGTTCACACGTTTGTTCCTTTTCTCTTTTCTCTTTCATCATACATACATACATACATATATATCT- GCGTAGATATGC-
 ACATGC 98
 TC-A 51 GTATATGCGTAAA-AGTGTCTGTCCCAACAAAAATTTTTTTTTTCCGCCTTCCATTTTTTTTTTTTTTGTGTGTTT-
 CCCTTGATCTCTCGAACAG 148
 TC-B 99 GTATATGCGTGAAGAGTGTCTGTCCCAA-----CATTTTTTTTTTTTTTTTGTGTGTTTCCCTTGATTCC-
 CGAACG 171
 TC-A 149
 GGCAGGAAAAAGCTTCTGTTTGACCAAAAAATATAAAATTATTAAGGGCGAGAAAAAGAAAAAATCAACGAGCAACAGGAGAGAACACCAACA 248
 TC-B 172 GGCAGAAAAAGCTTCTGTTTGACCAAAAAATATAAAATTATTAAGGGCGAGAAAA--GAAA--AAAAAATCAACCG--
 AGGAGACAAACACCAACA 260
 TC-A 249
 AAAAGGGGAAATTTATGCGATTAAAGAAATCATTACATGCATCGACATGCATACGGAAGGTGAAGCAGCAGCGATTGTGACGAGTGGTTTGCCACACATT 348
 TC-B 261
 AAAAGGGGAAATTTATGCGATTAAATCATTACATGCATCGACATGCATACGGAAGGTGAAGCAGCAGCGATTGTGACGAGTGGTTTGCCACACATT 360
 TC-A 349
 CCAGGTTTGAATATGGCGGAGAAGAAAGCATACCTGCAGGAAACATGGATTATTTGAGGCGTGGCATAATGCTGGAACACGTTGGTTCATGATGATATGT 448
 TC-B 361
 CCAGGTTTGAATATGGCGGAGAAGAAAGCATACCTGCAGGAAACATGGATTATTTGAGGCGTGGCATAATGCTGGAACACGTTGGTTCATGATGATATGT 460
 TC-A 449
 TTGGAGCCTTTTTATTTGACCCTATTGAAGAAGGCGCTGACTTGGGCATCTATTTCATGGATACCGGTGGCTATTTAAATATGTTGGACATAACTCAAT 548
 TC-B 461
 TTGGAGCCTTTTTATTTGACCCTATTGAAGAAGGCGCTGACTTGGGCATCTATTTCATGGATACCGGTGGCTATTTAAATATGTTGGACATAACTCAAT 560
 TC-A 549
 TGCAGCGGTTACGGCGGCAGTTGAACACGGGAATTGTAGCGTGCCGGCGAAGGCCAACAAATGTTCCGGTTGTCTGGACACACCTGCGGGGTTGGTGGCG 648
 TC-B 561
 TGCAGCGGTTACGGCGGCAGTTGAACACGGGAATTGTAGCGTGCCGGCGAAGGCCAACAAATGTTCCGGTTGTCTGGACACACCTGCGGGGTTGGTGGCG 660
 TC-A 649
 GGTACGGACACCTTCAGAGTGGTACTGAGAGTGAGGTGTCAAATGCGAGTATTATCAATGTACCTCATTTTTTGTATCAGCAGGATGTGGTGTTGTGT 748
 TC-B 661
 GGTACGGACACCTTCAGAGTGGTACTGAGAGTGAGGTGTCAAATGCGAGTATTATCAATGTACCTCATTTTTTGTATCAGCAGGATGTGGTGTTGTGT 760
 TC-A 749
 TGCCAAAGCCCTATGGTGAAGTACGGGTTGATATTGCAATTTGGAGGCAATTTTTTCGCCATTGTTCCCGCGGAGCAATTGGGAATGATATCTCCGTTCA 848
 TC-B 761
 TGCCAAAGCCCTATGGTGAAGTACGGGTTGATATTGCAATTTGGAGGCAATTTTTTCGCCATTGTTCCCGCGGAGCAATTGGGAATGATATCTCCGTTCA 860
 TC-A 849
 AAACCTCTCCAGGCTGCAGGAGGCAAGGAGAACTTCTGCGTACTGAAATCAATCGCAGTGTGAAGGTTACGACCCCTCAGCTGCCCCATATTAACACTGTG 948
 TC-B 861
 AAACCTCTCCAGGCTGCAGGAGGCAAGGAGAACTTCTGCGTACTGAAATCAATCGCAGTGTGAAGGTTACGACCCCTCAGCTGCCCCATATTAACACTGTG 960
 TC-A 949
 GACTGTGTTGAGATATACGGTCCGCCAACGAACCCGGAGGCAAAATACAAGAACGTTGTGATATTTGGCAATCGCCAGGCGGATCGCTCTCCATGTGGGA 1048
 TC-B 961
 GACTGTGTTGAGATATACGGTCCGCCAACGAACCCGGAGGCAAAATACAAGAACGTTGTGATATTTGGCAATCGCCAGGCGGATCGCTCTCCATGTGGGA 1060
 TC-A 1049
 CAGGACACAGCGCCAAGATGGCAACACTTTATGCCAAAGGCCAGCTTCGCATCGGAGAGACTTTTGTGTACGAGAGCATACTCGGCTCACTCTCCAGGG 1148
 TC-B 1061
 CAGGACACAGCGCCAAGATGGCAACACTTTATGCCAAAGGCCAGCTTCGCATCGGAGAGACTTTTGTGTACGAGAGCATACTCGGCTCACTCTCCAGGG 1160
 TC-A 1149
 CAGGGTACTTGGGAGGAGCAATACCGGGGGTGAAGGTGCGCGTGACCAAGATGCCGAGGAAGGGATGCTCGTTGTAACGTCAGAAATTAAGGAAAG 1248
 TC-B 1161
 CAGGGTACTTGGGAGGAGCAATACCGGGGGTGAAGGTGCGCGTGACCAAGATGCCGAGGAAGGGATGCTCGTTGTAACGTCAGAAATTAAGGAAAG 1260
 TC-A 1249
 GCTTTTATCATGGGTTTCAACACCATGCTGTTTGAACCAACGGATCCGTTTGAACGGATTACACTAAAGCTAGATCTGGTAGAGCACAGAACTA 1348
 TC-B 1261
 GCTTTTATCATGGGTTTCAACACCATGCTGTTTGAACCAACGGATCCGTTTGAACGGATTACACTAAAGCTAGATCTGGTAGAGCACAGAACTA 1360
 TC-A 1349
 TTGGGGAACACAGTGGCAACAGGTGCTGCTACGTGAAGGGTATTGAATGAATCGTTTTTTTTTTTTTTTTTTTTTTTATTAGTCAATTATTATTA 1448
 TC-B 1361
 TTGGGGAACACAGTGGCAACAGGTGCTGCTACGTGAAGGGTATTGAATGAATCGTTTTTTTTTTTTTTTTTTTTTTT-----
 TTTTATTAGTCAATTATTATTA 1449
 TC-A 1449
 ATTTTTTTTTTGTGTGGGGTTTCAACCGGTACCGCGTTGGGAGCAGGGAAGCGATAGCGGCGGACAAATTTTTTGTCTTTATTTTCATTTTCATCTTCCT 1548
 TC-B 1450
 ATTTTTTTTTTGTGTGGGGTTTCAACCGGTACCGCGTTGGGAGCAGGGAAGCGATAGCGGCGGACAAATTTTTTGTCTTTATTTTCATTTTCATCTTCCT 1548
 TC-A 1549
 ACCCAACCCCTTGGTTCCACCGGTGCGGGCGGGGCTTTGTTGGGTGGAGG 1598
 TC-B 1549
 ACCCAACCCCTTGGTTCCACCGGTGCGGGCGGGG----- 1583

B



C



D

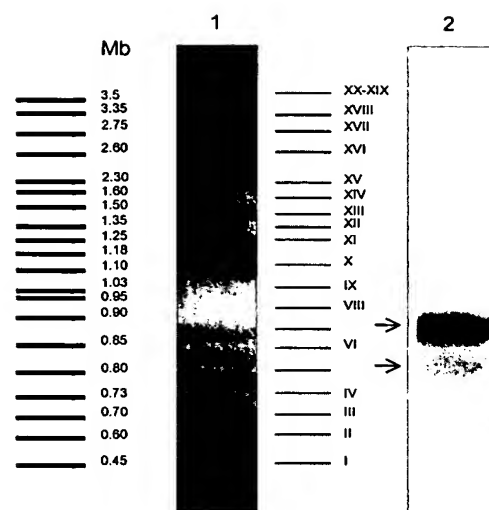
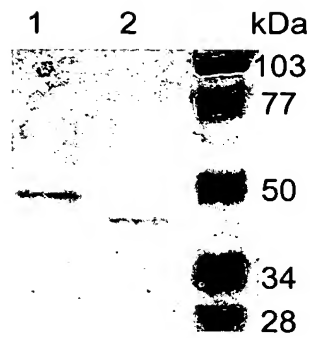
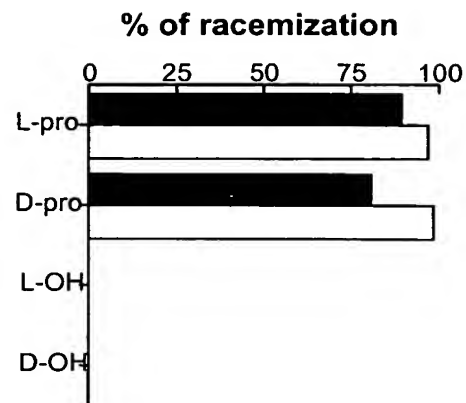


Figure 2

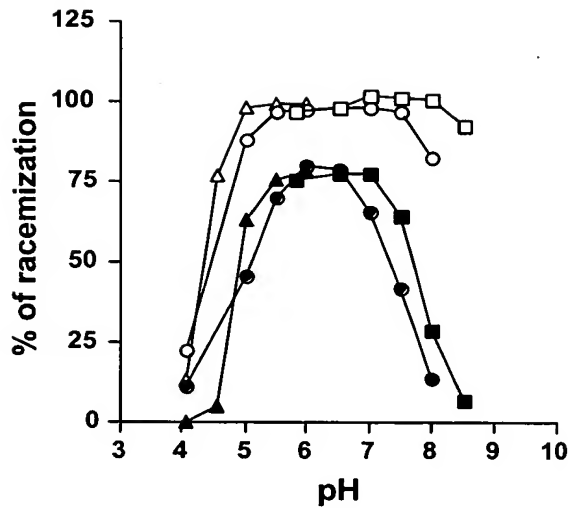
A



B



C



D

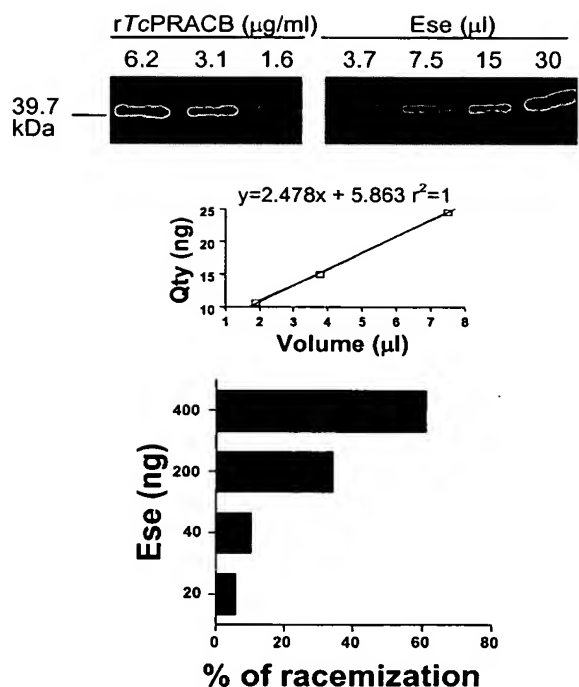


Figure 3

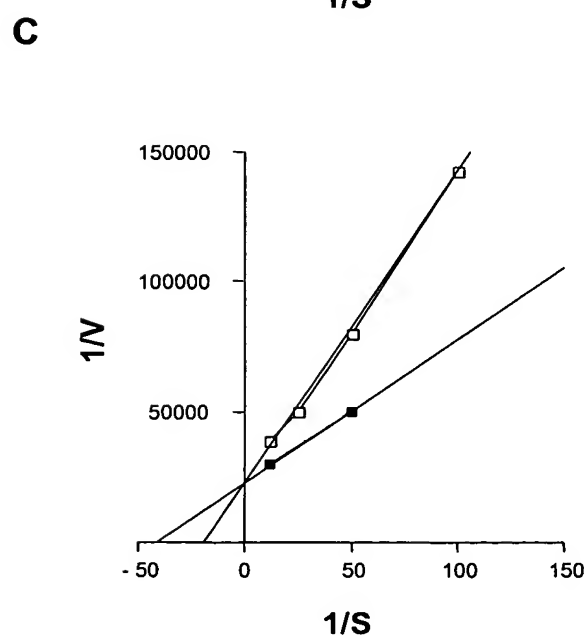
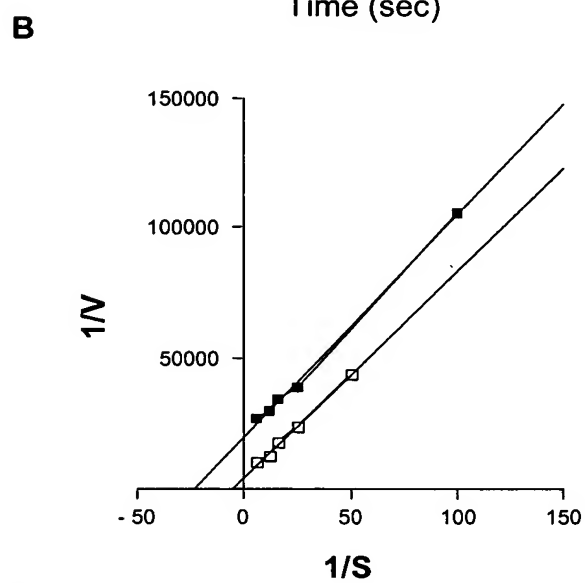
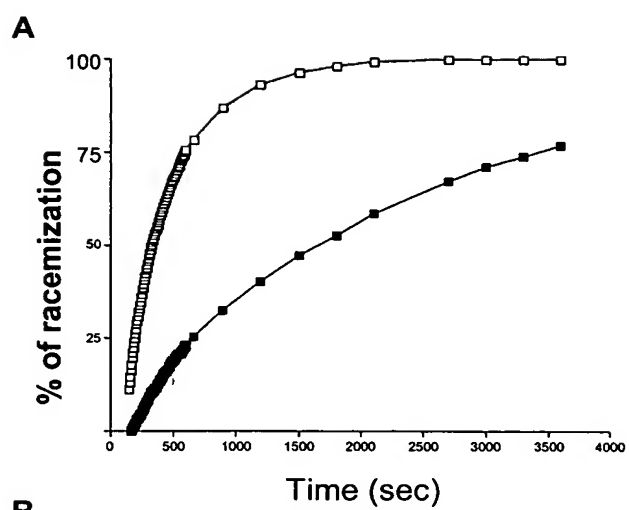


Figure 4

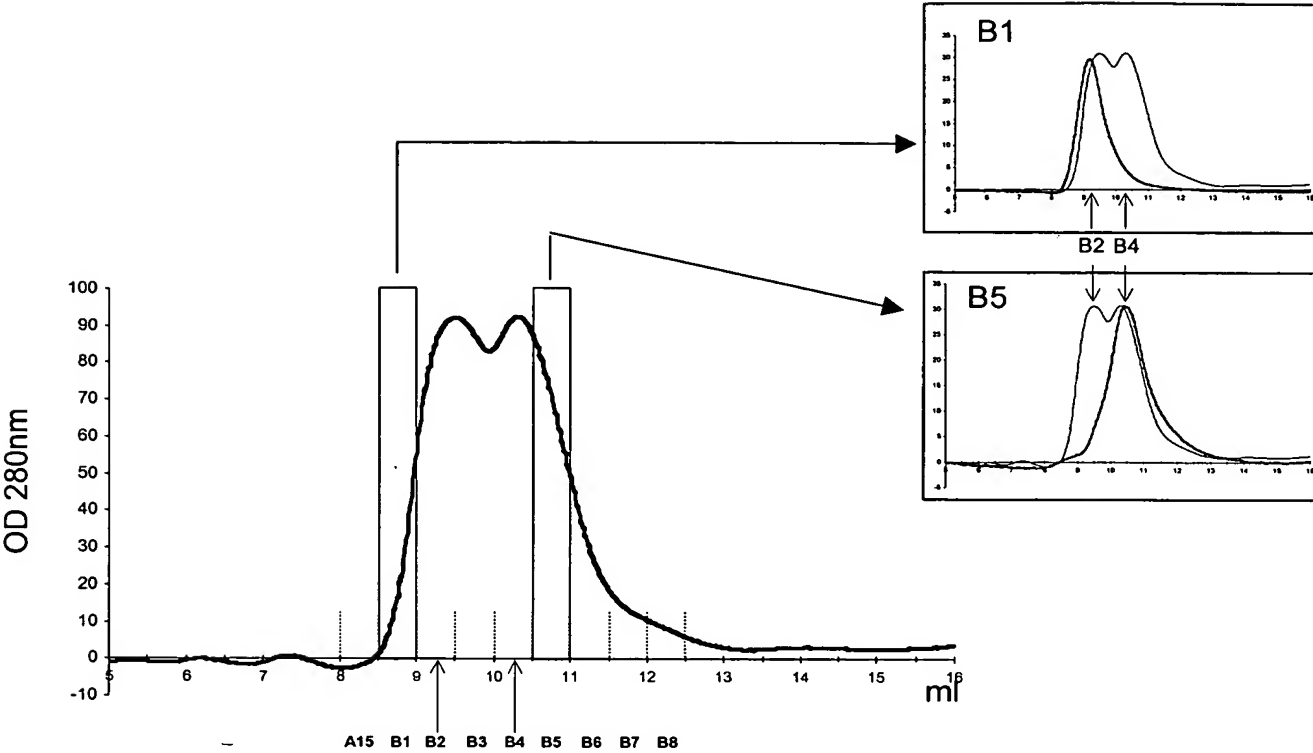


Figure 5

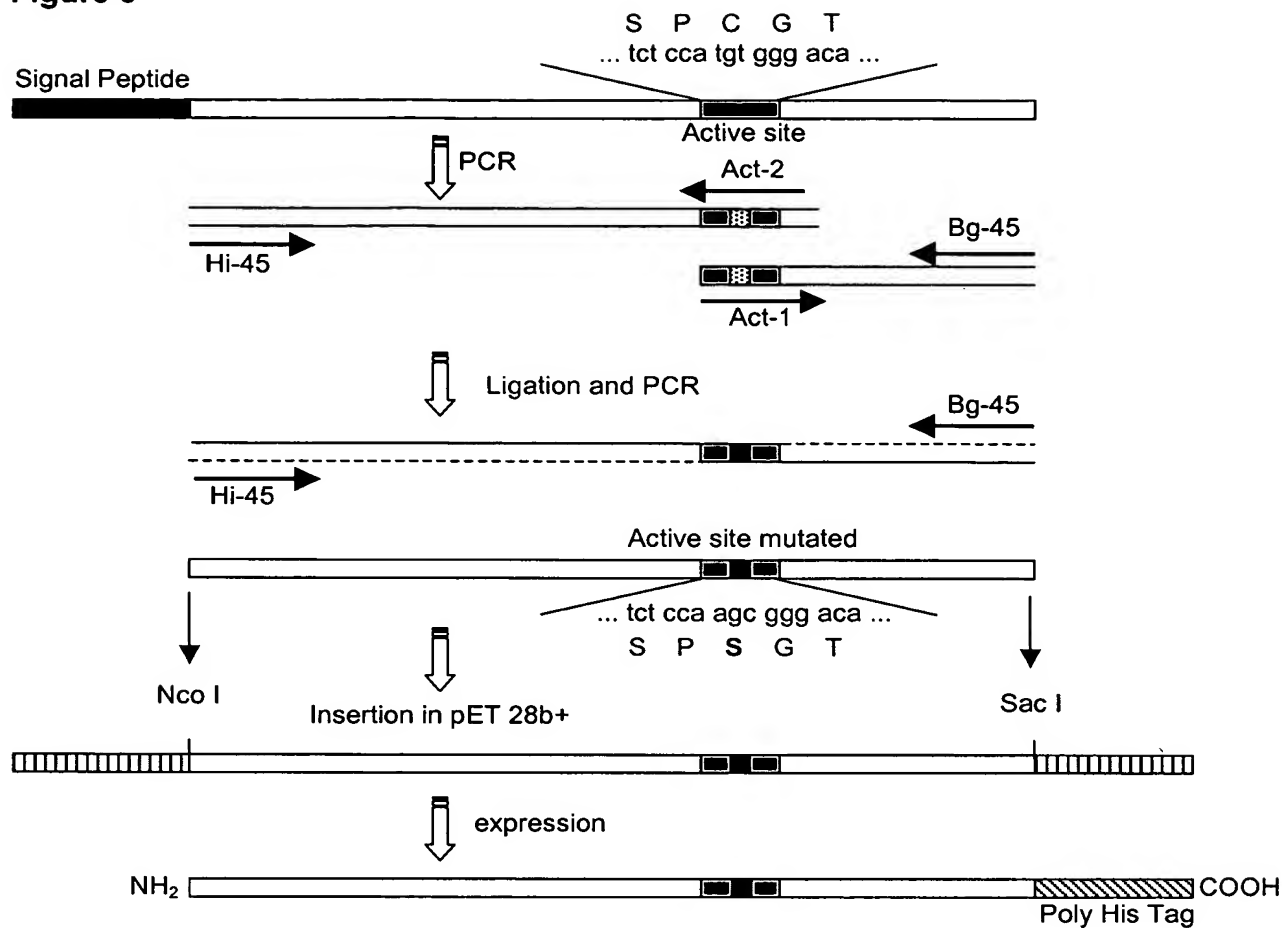


Figure 6

A

		M I	
TcPRACA	1	MRKSVCKPKQKFFSAPPFPFFFCVPLI	SRTOGKLLFDQYKII
TcPRACB	1	MRKSVCKPKQKFFSAPPFPFFFCVPLI	SRTOGKLLFDQYKII
C.sicklandii	1	MRKSVCKPKQKFFSAPPFPFFFCVPLI	SRTOGKLLFDQYKII
H.sapiens1	1	MRKSVCKPKQKFFSAPPFPFFFCVPLI	SRTOGKLLFDQYKII
H.sapiens2	1	MRKSVCKPKQKFFSAPPFPFFFCVPLI	SRTOGKLLFDQYKII
M.musculus1	1	MRKSVCKPKQKFFSAPPFPFFFCVPLI	SRTOGKLLFDQYKII
M.musculus2	1	MRKSVCKPKQKFFSAPPFPFFFCVPLI	SRTOGKLLFDQYKII
R.loti1	1	MRKSVCKPKQKFFSAPPFPFFFCVPLI	SRTOGKLLFDQYKII
B.melicensis1	1	MRKSVCKPKQKFFSAPPFPFFFCVPLI	SRTOGKLLFDQYKII
R.meliloti2	1	MRKSVCKPKQKFFSAPPFPFFFCVPLI	SRTOGKLLFDQYKII
A.cumefaciens3	1	MRKSVCKPKQKFFSAPPFPFFFCVPLI	SRTOGKLLFDQYKII
X.campestris1	1	MRKSVCKPKQKFFSAPPFPFFFCVPLI	SRTOGKLLFDQYKII
X.axenopodis1	1	MRKSVCKPKQKFFSAPPFPFFFCVPLI	SRTOGKLLFDQYKII
P.aeruginosa1	1	MRKSVCKPKQKFFSAPPFPFFFCVPLI	SRTOGKLLFDQYKII
P.aeruginosa2	1	MRKSVCKPKQKFFSAPPFPFFFCVPLI	SRTOGKLLFDQYKII
B.melicensis2	1	MRKSVCKPKQKFFSAPPFPFFFCVPLI	SRTOGKLLFDQYKII
A.cumefaciens2	1	MRKSVCKPKQKFFSAPPFPFFFCVPLI	SRTOGKLLFDQYKII
R.meliloti1	1	MRKSVCKPKQKFFSAPPFPFFFCVPLI	SRTOGKLLFDQYKII
R.loti2	1	MRKSVCKPKQKFFSAPPFPFFFCVPLI	SRTOGKLLFDQYKII
X.axenopodis2	1	MRKSVCKPKQKFFSAPPFPFFFCVPLI	SRTOGKLLFDQYKII
S.caelicolor1	1	MRKSVCKPKQKFFSAPPFPFFFCVPLI	SRTOGKLLFDQYKII
A.cumefaciens1	1	MRKSVCKPKQKFFSAPPFPFFFCVPLI	SRTOGKLLFDQYKII

TcPRACA	101	SNMAEKAYLQENNDY	--LRRGIMLEPRGHDMGPAFLDPD	IEBAGLGMVMDTGGYLMCGHNS	IAAVTAAVETGIVSVP	-AKATNVVPLVDTFAGLV	197
TcPRACB	101	SNMAEKAYLQENNDY	--LRRGIMLEPRGHDMGPAFLDPD	IEBAGLGMVMDTGGYLMCGHNS	IAAVTAAVETGIVSVP	-AKATNVVPLVDTFAGLV	197
C.sicklandii	101	SNMAEKAYLQENNDY	--LRRGIMLEPRGHDMGPAFLDPD	IEBAGLGMVMDTGGYLMCGHNS	IAAVTAAVETGIVSVP	-AKATNVVPLVDTFAGLV	197
H.sapiens1	101	SNMAEKAYLQENNDY	--LRRGIMLEPRGHDMGPAFLDPD	IEBAGLGMVMDTGGYLMCGHNS	IAAVTAAVETGIVSVP	-AKATNVVPLVDTFAGLV	197
H.sapiens2	101	SNMAEKAYLQENNDY	--LRRGIMLEPRGHDMGPAFLDPD	IEBAGLGMVMDTGGYLMCGHNS	IAAVTAAVETGIVSVP	-AKATNVVPLVDTFAGLV	197
M.musculus1	101	SNMAEKAYLQENNDY	--LRRGIMLEPRGHDMGPAFLDPD	IEBAGLGMVMDTGGYLMCGHNS	IAAVTAAVETGIVSVP	-AKATNVVPLVDTFAGLV	197
M.musculus2	101	SNMAEKAYLQENNDY	--LRRGIMLEPRGHDMGPAFLDPD	IEBAGLGMVMDTGGYLMCGHNS	IAAVTAAVETGIVSVP	-AKATNVVPLVDTFAGLV	197
R.loti1	101	SNMAEKAYLQENNDY	--LRRGIMLEPRGHDMGPAFLDPD	IEBAGLGMVMDTGGYLMCGHNS	IAAVTAAVETGIVSVP	-AKATNVVPLVDTFAGLV	197
B.melicensis1	101	SNMAEKAYLQENNDY	--LRRGIMLEPRGHDMGPAFLDPD	IEBAGLGMVMDTGGYLMCGHNS	IAAVTAAVETGIVSVP	-AKATNVVPLVDTFAGLV	197
R.meliloti2	101	SNMAEKAYLQENNDY	--LRRGIMLEPRGHDMGPAFLDPD	IEBAGLGMVMDTGGYLMCGHNS	IAAVTAAVETGIVSVP	-AKATNVVPLVDTFAGLV	197
A.cumefaciens3	101	SNMAEKAYLQENNDY	--LRRGIMLEPRGHDMGPAFLDPD	IEBAGLGMVMDTGGYLMCGHNS	IAAVTAAVETGIVSVP	-AKATNVVPLVDTFAGLV	197
X.campestris1	101	SNMAEKAYLQENNDY	--LRRGIMLEPRGHDMGPAFLDPD	IEBAGLGMVMDTGGYLMCGHNS	IAAVTAAVETGIVSVP	-AKATNVVPLVDTFAGLV	197
X.axenopodis1	101	SNMAEKAYLQENNDY	--LRRGIMLEPRGHDMGPAFLDPD	IEBAGLGMVMDTGGYLMCGHNS	IAAVTAAVETGIVSVP	-AKATNVVPLVDTFAGLV	197
P.aeruginosa1	101	SNMAEKAYLQENNDY	--LRRGIMLEPRGHDMGPAFLDPD	IEBAGLGMVMDTGGYLMCGHNS	IAAVTAAVETGIVSVP	-AKATNVVPLVDTFAGLV	197
P.aeruginosa2	101	SNMAEKAYLQENNDY	--LRRGIMLEPRGHDMGPAFLDPD	IEBAGLGMVMDTGGYLMCGHNS	IAAVTAAVETGIVSVP	-AKATNVVPLVDTFAGLV	197
B.melicensis2	101	SNMAEKAYLQENNDY	--LRRGIMLEPRGHDMGPAFLDPD	IEBAGLGMVMDTGGYLMCGHNS	IAAVTAAVETGIVSVP	-AKATNVVPLVDTFAGLV	197
A.cumefaciens2	101	SNMAEKAYLQENNDY	--LRRGIMLEPRGHDMGPAFLDPD	IEBAGLGMVMDTGGYLMCGHNS	IAAVTAAVETGIVSVP	-AKATNVVPLVDTFAGLV	197
R.meliloti1	101	SNMAEKAYLQENNDY	--LRRGIMLEPRGHDMGPAFLDPD	IEBAGLGMVMDTGGYLMCGHNS	IAAVTAAVETGIVSVP	-AKATNVVPLVDTFAGLV	197
R.loti2	101	SNMAEKAYLQENNDY	--LRRGIMLEPRGHDMGPAFLDPD	IEBAGLGMVMDTGGYLMCGHNS	IAAVTAAVETGIVSVP	-AKATNVVPLVDTFAGLV	197
X.axenopodis2	101	SNMAEKAYLQENNDY	--LRRGIMLEPRGHDMGPAFLDPD	IEBAGLGMVMDTGGYLMCGHNS	IAAVTAAVETGIVSVP	-AKATNVVPLVDTFAGLV	197
S.caelicolor1	101	SNMAEKAYLQENNDY	--LRRGIMLEPRGHDMGPAFLDPD	IEBAGLGMVMDTGGYLMCGHNS	IAAVTAAVETGIVSVP	-AKATNVVPLVDTFAGLV	197
A.cumefaciens1	101	SNMAEKAYLQENNDY	--LRRGIMLEPRGHDMGPAFLDPD	IEBAGLGMVMDTGGYLMCGHNS	IAAVTAAVETGIVSVP	-AKATNVVPLVDTFAGLV	197

		M II	
TcPRACA	198	RGTAHLQSGTESSEVSNAII	WNRFLYQDDVVVLKPKY
TcPRACB	198	RGTAHLQSGTESSEVSNAII	WNRFLYQDDVVVLKPKY
C.sicklandii	198	RGTAHLQSGTESSEVSNAII	WNRFLYQDDVVVLKPKY
H.sapiens1	198	RGTAHLQSGTESSEVSNAII	WNRFLYQDDVVVLKPKY
H.sapiens2	198	RGTAHLQSGTESSEVSNAII	WNRFLYQDDVVVLKPKY
M.musculus1	198	RGTAHLQSGTESSEVSNAII	WNRFLYQDDVVVLKPKY
M.musculus2	198	RGTAHLQSGTESSEVSNAII	WNRFLYQDDVVVLKPKY
R.loti1	198	RGTAHLQSGTESSEVSNAII	WNRFLYQDDVVVLKPKY
B.melicensis1	198	RGTAHLQSGTESSEVSNAII	WNRFLYQDDVVVLKPKY
R.meliloti2	198	RGTAHLQSGTESSEVSNAII	WNRFLYQDDVVVLKPKY
A.cumefaciens3	198	RGTAHLQSGTESSEVSNAII	WNRFLYQDDVVVLKPKY
X.campestris1	198	RGTAHLQSGTESSEVSNAII	WNRFLYQDDVVVLKPKY
X.axenopodis1	198	RGTAHLQSGTESSEVSNAII	WNRFLYQDDVVVLKPKY
P.aeruginosa1	198	RGTAHLQSGTESSEVSNAII	WNRFLYQDDVVVLKPKY
P.aeruginosa2	198	RGTAHLQSGTESSEVSNAII	WNRFLYQDDVVVLKPKY
B.melicensis2	198	RGTAHLQSGTESSEVSNAII	WNRFLYQDDVVVLKPKY
A.cumefaciens2	198	RGTAHLQSGTESSEVSNAII	WNRFLYQDDVVVLKPKY
R.meliloti1	198	RGTAHLQSGTESSEVSNAII	WNRFLYQDDVVVLKPKY
R.loti2	198	RGTAHLQSGTESSEVSNAII	WNRFLYQDDVVVLKPKY
X.axenopodis2	198	RGTAHLQSGTESSEVSNAII	WNRFLYQDDVVVLKPKY
S.caelicolor1	198	RGTAHLQSGTESSEVSNAII	WNRFLYQDDVVVLKPKY
A.cumefaciens1	198	RGTAHLQSGTESSEVSNAII	WNRFLYQDDVVVLKPKY

		M III	
TcPRACA	298	VDCVEIY-GPP-TNPEANYKNNV	PGNRQAL
TcPRACB	298	VDCVEIY-GPP-TNPEANYKNNV	PGNRQAL
C.sicklandii	298	VDCVEIY-GPP-TNPEANYKNNV	PGNRQAL
H.sapiens1	298	VDCVEIY-GPP-TNPEANYKNNV	PGNRQAL
H.sapiens2	298	VDCVEIY-GPP-TNPEANYKNNV	PGNRQAL
M.musculus1	298	VDCVEIY-GPP-TNPEANYKNNV	PGNRQAL
M.musculus2	298	VDCVEIY-GPP-TNPEANYKNNV	PGNRQAL
R.loti1	298	VDCVEIY-GPP-TNPEANYKNNV	PGNRQAL
B.melicensis1	298	VDCVEIY-GPP-TNPEANYKNNV	PGNRQAL
R.meliloti2	298	VDCVEIY-GPP-TNPEANYKNNV	PGNRQAL
A.cumefaciens3	298	VDCVEIY-GPP-TNPEANYKNNV	PGNRQAL
X.campestris1	298	VDCVEIY-GPP-TNPEANYKNNV	PGNRQAL
X.axenopodis1	298	VDCVEIY-GPP-TNPEANYKNNV	PGNRQAL
P.aeruginosa1	298	VDCVEIY-GPP-TNPEANYKNNV	PGNRQAL
P.aeruginosa2	298	VDCVEIY-GPP-TNPEANYKNNV	PGNRQAL
B.melicensis2	298	VDCVEIY-GPP-TNPEANYKNNV	PGNRQAL
A.cumefaciens2	298	VDCVEIY-GPP-TNPEANYKNNV	PGNRQAL
R.meliloti1	298	VDCVEIY-GPP-TNPEANYKNNV	PGNRQAL
R.loti2	298	VDCVEIY-GPP-TNPEANYKNNV	PGNRQAL
X.axenopodis2	298	VDCVEIY-GPP-TNPEANYKNNV	PGNRQAL
S.caelicolor1	298	VDCVEIY-GPP-TNPEANYKNNV	PGNRQAL
A.cumefaciens1	298	VDCVEIY-GPP-TNPEANYKNNV	PGNRQAL

TcPRACA	395	ITGKAFIMGFNTMLDPDTPDFKNGPTLQ	-----	423
TcPRACB	395	ITGKAFIMGFNTMLDPDTPDFKNGPTLQ	-----	423
C.sicklandii	395	ITGKAFIMGFNTMLDPDTPDFKNGPTLQ	-----	423
H.sapiens1	395	ITGKAFIMGFNTMLDPDTPDFKNGPTLQ	-----	423
H.sapiens2	395	ITGKAFIMGFNTMLDPDTPDFKNGPTLQ	-----	423
M.musculus1	395	ITGKAFIMGFNTMLDPDTPDFKNGPTLQ	-----	423
M.musculus2	395	ITGKAFIMGFNTMLDPDTPDFKNGPTLQ	-----	423
R.loti1	395	ITGKAFIMGFNTMLDPDTPDFKNGPTLQ	-----	423
B.melicensis1	395	ITGKAFIMGFNTMLDPDTPDFKNGPTLQ	-----	423
R.meliloti2	395	ITGKAFIMGFNTMLDPDTPDFKNGPTLQ	-----	423
A.cumefaciens3	395	ITGKAFIMGFNTMLDPDTPDFKNGPTLQ	-----	423
X.campestris1	395	ITGKAFIMGFNTMLDPDTPDFKNGPTLQ	-----	423
X.axenopodis1	395	ITGKAFIMGFNTMLDPDTPDFKNGPTLQ	-----	423
P.aeruginosa1	395	ITGKAFIMGFNTMLDPDTPDFKNGPTLQ	-----	423
P.aeruginosa2	395	ITGKAFIMGFNTMLDPDTPDFKNGPTLQ	-----	423
B.melicensis2	395	ITGKAFIMGFNTMLDPDTPDFKNGPTLQ	-----	423
A.cumefaciens2	395	ITGKAFIMGFNTMLDPDTPDFKNGPTLQ	-----	423
R.meliloti1	395	ITGKAFIMGFNTMLDPDTPDFKNGPTLQ	-----	423
R.loti2	395	ITGKAFIMGFNTMLDPDTPDFKNGPTLQ	-----	423
X.axenopodis2	395	ITGKAFIMGFNTMLDPDTPDFKNGPTLQ	-----	423
S.caelicolor1	395	ITGKAFIMGFNTMLDPDTPDFKNGPTLQ	-----	423
A.cumefaciens1	395	ITGKAFIMGFNTMLDPDTPDFKNGPTLQ	-----	423

Figure 7

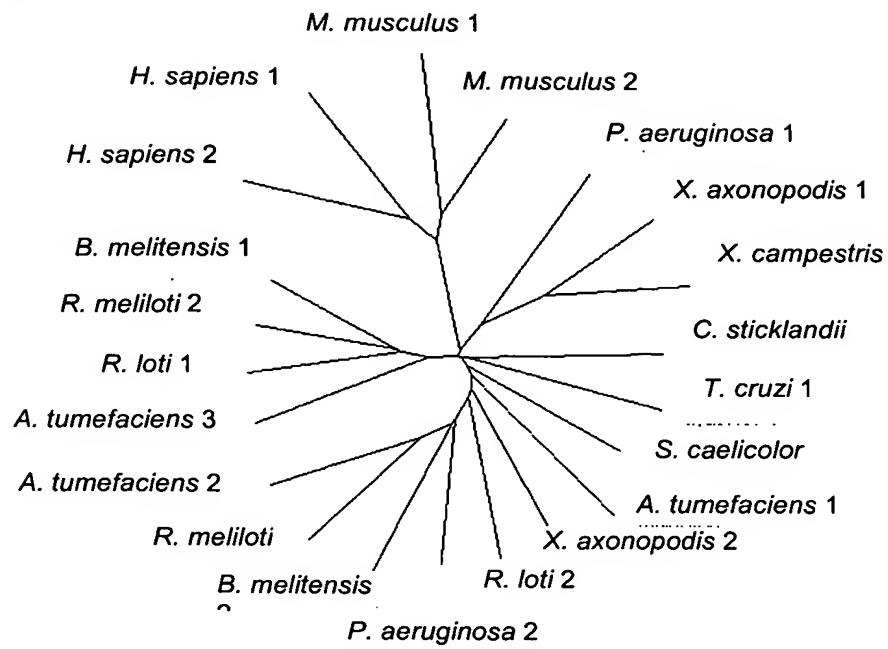


FIGURE 8

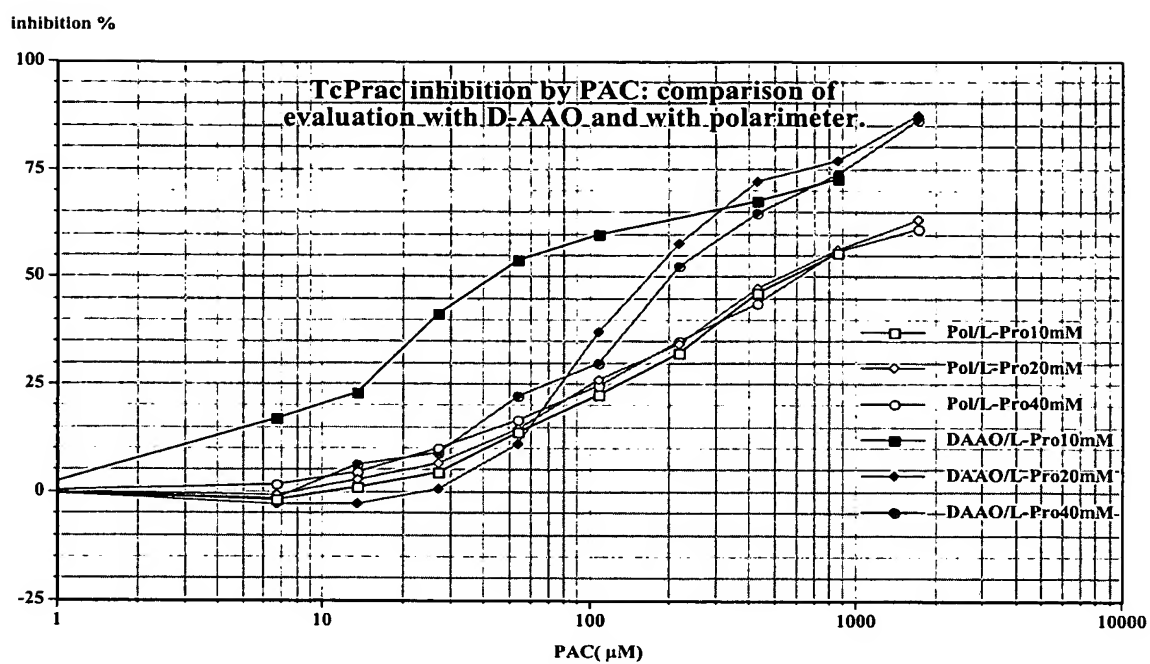


Figure 9

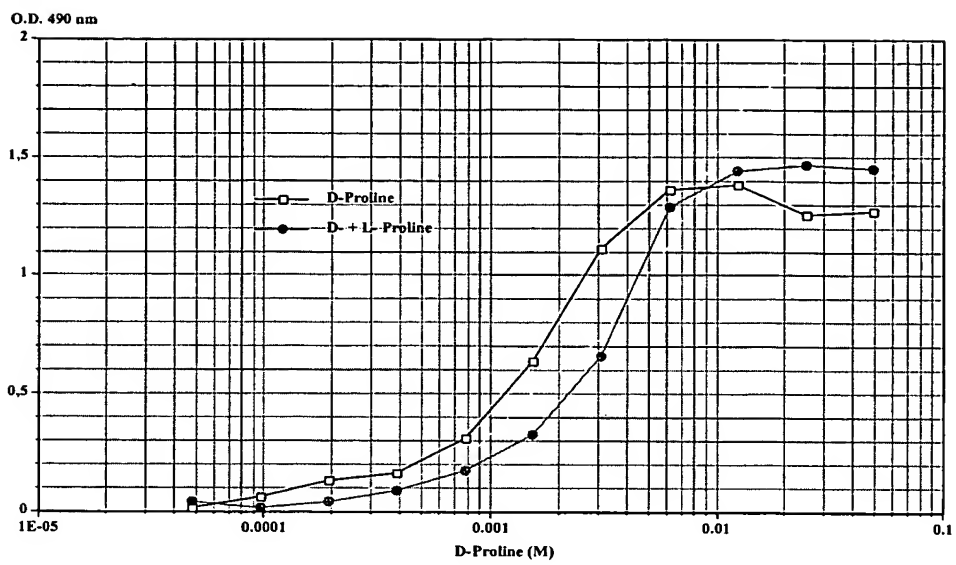


Figure 10

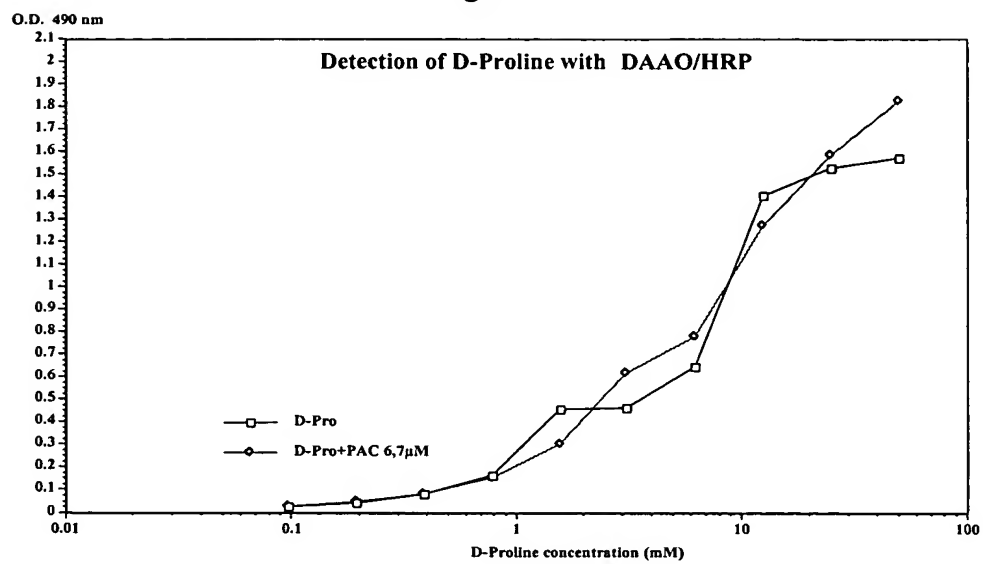


FIGURE 11

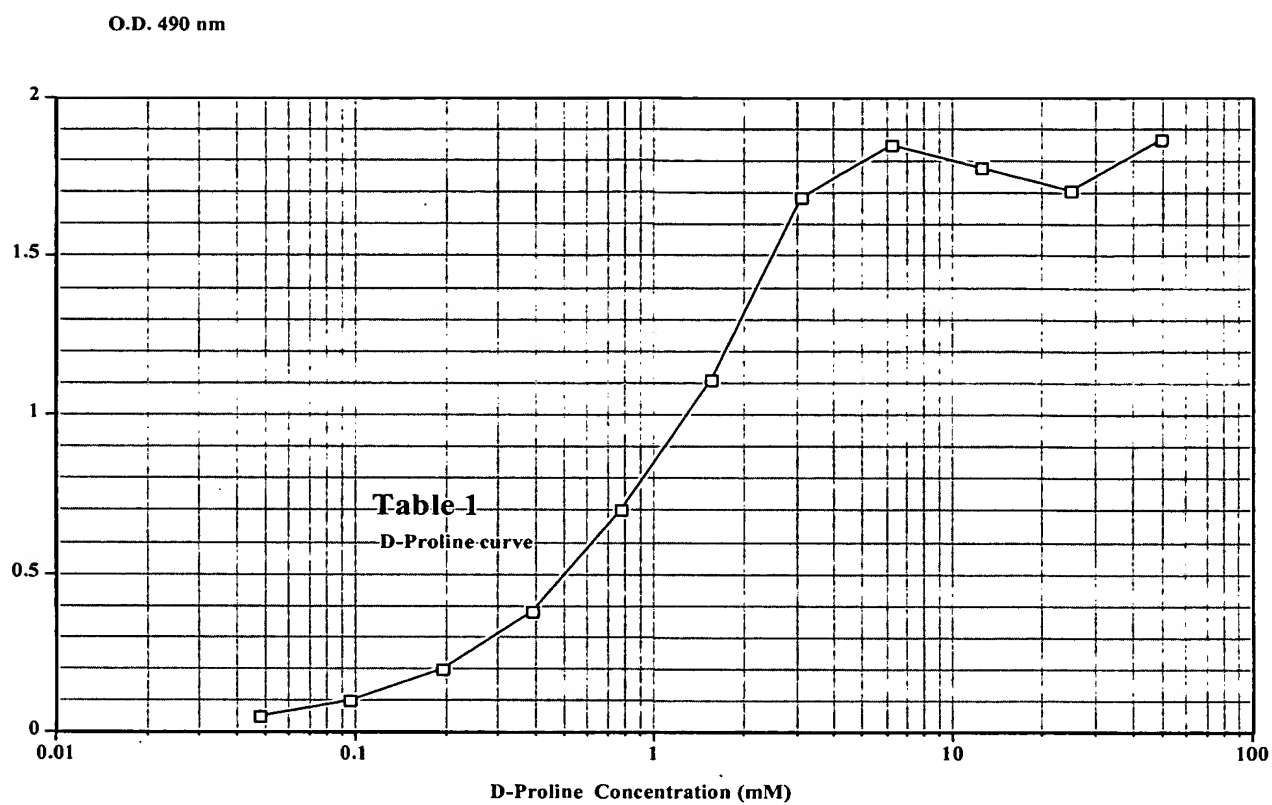


FIGURE 12

The loss of the enzymatic activity of proline racemase after mutagenesis of the Cys160 or the Cys330 residues is shown in the figure below. The results confirm that both residues of a same homodimer unit are implicated in the enzymatic active site of the proline racemase. Furthermore, these results challenge the previous proposed mechanism of proline racemization predicted for the protobacterium *Clostridium sticklandii*, as TcPRAC possesses two active sites per homodimer.

